

DATE: December 8, 1978

SUBJECT: Inspection of Foundry Core Sand Landfills Affecting Abrams Creek in the City of Brook Park, Ohio

FROM: John Wilson

THRU: A. R. Winkhofer, Director, EDO

TO: Ronald Mustard, Director, Office of Federal Activities

ATTN: Robert Kay, Office of Federal Activities

On October 25, 1978, John Wilson, EDO met with Mr. Fred Mueller, U.S. Army Corps of Engineers, Brook Park Councilmen and representatives from Cleveland Hopkins International Airport, City of Cleveland, U.S. Fish and Wildlife, and Ohio EPA. Enclosed is an attendance list for the meeting. The purpose of this meeting was to inspect and evaluate the dumping problems near Abrams Creek, specifically Ford Motor Company foundry sand dumped at the southwest end of the Cleveland Airport runway off Grayton Road (see attached map). The foundry sand dumped at this site is on both sides of Abrams Creek. The depth of the fill is approximately 30 to 50 feet deep and reaches right up to the creek with steep banks. The core sand is eroding into the creek as indicated by gullies along the banks of the fill (see attached photographs). Mr. Robert Volk from the Engineering Department of the Cleveland Hopkins Airport stated that the airport was willing to rectify the problems caused by the core sand fill on Abrams Creek at the end of the runway if U.S. EPA would state what had to be done.

Attached is a table showing the results of CRL's analysis of Ford Motor Company foundry core sand obtained from the City of Brook Park Landfill and the Naimen Company Landfill on August 23, 1978. The results are variable for the three samples taken at different locations but give an indication that the core sand is highly contaminated depending on the type of core sand and how it was used by the Ford Motor Company in their casting operations.

Based on "Guidelines for Pollutational Classification of Great Lakes Harbor Sediments, Region V, April 1977", the Ford Motor foundry core sand that was analyzed is polluted as listed below:

Moderately Polluted

Sample EZ03502, Brook Park Land Fill

Barium - 40 mg/kg

Chromium - 63 mg/kg

Iron - 23,000 mg/kg

Nickel - 31 mg/kg

Sample EZ03501, Naimen Company Fill

TKN - 1200 mg/kg

Heavily Polluted

Sample EZ03502, Brook Park Land Fill

Copper - 64 mg/kg

Trace amounts of PCB's was also found in the core sand (<0.1 mg/kg).



The matter of regulating landfill activity on Cleveland Hopkins Airport property through the NPDES program was discussed in Colonel Daniel D. Ludwig's letter of January 17, 1978 to Ronald Mustard, Office of Federal Activities. Ronald Mustard's letter of September 5, 1978 to Colonel Ludwig states the need for a NPDES permit for any future waste disposal activities in Abrams Creek should our investigations verify that the landfill materials contain toxic pollutants.

In view of the fact that the foundry core sand is found to be highly contaminated this office recommends that the Ford Motor Company be required to get a NPDES permit in order to place restrictions on the off-site disposal of foundry sand and other waste materials on Abrams Creek. The City of Cleveland should also have a NPDES permit to control their dumping of foundry core sand along the banks of Abrams Creek. The core sand fill southwest of the Cleveland Airport runway is eroding into Abrams Creek and should be contained in some manner to prevent further pollution of the creek. This will require embankment removal to reduce the slope for stabilization, coverage of the core sand with clean fill, seeding etc. The City of Brook Park should also be required to have an NPDES permit since they have allowed the foundry core sand to be dumped on their property south of the tank plant off Brook Park Industrial Parkway and also at their service center at Riverside Drive (see attached map). Consideration should be given to whether any new dumping would be better controlled under the Resource Conservation Recovery Act.

Flooding and erosion problems on Abrams Creek have resulted downstream of the airport runway because of the dumping of foundry sand along the creek and consequent loss of wetlands and floodplains. Mr. Gary Goss' property at 22420 Cedar Point Road, downstream of the landfills mentioned above, has had erosion problems since the dumping of core sand along Abrams Creek began two years ago. Mr. Goss has had to fill in his property along Abrams Creek to replace what was eroded away during periods of flooding in order to protect his property. In view of this our office recommends that a Section 404 permit should be required for all parties concerned with the dumping activities on Abrams Creek.

Please send a copy of this report to Mr. Fred Mueller, who has requested a copy. His address is U.S. Corps of Engineers, Buffalo District, Foot of East Ninth Street, Cleveland, Ohio 44114.

Enclosures

cc: Donald Wallgren, Deputy Director, S&AD

Ford Motor Foundry Core Sand S  
on Abrams Cree

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Sample No.	Location	F mg/kg	Sulfate mg/kg	TKN mg/kg
Z03S01	Naiman Co. Landfill, Side of Bank near Abrams Creek	24	946	1200
Z03S02	Brook Park Landfill, East end side, 15' from top	42	1197	270
Z03S03	Brook Park Landfill, South end side, 2' from top	31	1028	260

Sample No.	Location	Al mg/kg	B mg/kg	Ba mg/kg
Z03S01	Naiman Co. Landfill, Side of Bank near Abrams Creek	760	< 5	6
Z03S02	Brook Park Landfill, East end side, 15' from top	2200	6	40
Z03S03	Brook Park Landfill, South End Side, 2' from top	1500	< 5	16

Sample No.	Location	Pb mg/kg	Sn mg/kg	Tl mg/kg
Z03S01	Naiman Co. Landfill, Side of Bank Near Abrams Creek	13	5	32
Z03S02	Brook Park Landfill, East End Side, 15' from top	7	4	69
Z03S03	Brook Park Landfill, South end side, 2' from top	6	4	49

The following ranges used to classify sediments from Great Lakes harbors are based on compilations of data from over 100 different harbors since 1967. -

	<u>NONPOLLUTED</u>	<u>MODERATELY POLLUTED</u>	<u>HEAVILY POLLUTED</u>
Volatile Solids (%)	<5	5 - 8	>8
COD (mg/kg dry weight)	<40,000	40,000-80,000	>80,000
TKN " " "	<1,000	1,000-2,000	>2,000
Oil and Grease (Hexane Solubles) (mg/kg dry weight)	<1,000	1,000-2,000	>2,000
Lead (mg/kg dry weight)	<40	40-60	>60
Zinc " " "	<90	90-200	>200

The following supplementary ranges used to classify sediments from Great Lakes harbors have been developed to the point where they are usable but are still subject to modification by the addition of new data. These ranges are based on 260 samples from 34 harbors sampled during 1974 and 1975.

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EDAR POINT RD

CLEVELAND HOPKINS  
AIRPORT

CITY OF

EASEMENTS

AIRPORT  
LANDFILL

*unimproved*

LANDFILL RD

GRAYTON RD  
LANDFILL

*slurry  
pit*

ABRAMS

BROOK PARK INDUSTRIAL

BROOK PARK LANDFILL

ORIGINAL  
COURSE OF  
ABRAMS CR

CREEK

EASEMENT

CRESTWOOD DR

FORESTVIEW  
CIRCLE

CLYDE

UNION DR

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300th AVE

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